FILE 'MEDLINE, EMBASE, BIOSIS, CAPLUS' ENTERED AT 12:40:12 ON 02 JAN 2005

L1 3283875 S DNA OR NUCLEIC ACID
L2 1841900 S PURIFICATION OR ISOLATION
L3 56358 S L1 (S) L2
L4 35660 S CHAOTROPIC OR (GUANIDIN? THIOCYANATE) OR (GUANIDIN? CHLORIDE)
L5 239 S L3 (S) L4
L6 25 S L5 AND RNASE
L7 20 DUP REM L6 (5 DUPLICATES REMOVED)
L8 170 DUP REM L5 (69 DUPLICATES REMOVED)
L9 331 S L3 (P) L4
L10 214 DUP REM L9 (117 DUPLICATES REMOVED)
L11 23 S L10 AND RNASE
L12 20 S L10 AND SOLVENT
L13 108 S L10 AND PY<1999
L14 17 S L13 AND PLASMID

IN Boom, Willem Rene; Adriaanse, Henriette Maria Aleida; Kievits, Tim; Lens, Peter Franklin
SO Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW
TI Process and test kit for isolating nucleic acid using a chaotropic substance and a nucleic acid adsorbent
AB Nucleic acid is isolated from a material by mixing the material with a chaotropic substance and a nucleic acid-binding solid phase, sepg. the solid phase from the liq., washing the solid phase, and, if required, eluting the nucleic acid. A combination of means for carrying out the method and a test kit that includes means for amplifying the nucleic acid are also claimed. Covalently closed and circular plasmid pGem3p24 DNA were efficiently isolated from human serum when 3M KI, 3M NaI, or 3M NaSCN in combination with 8 M urea were used as chaotropic substances. The nucleic acid-binding phase was Silica Coarse (SC). The yield of relaxed plasmid was higher than that of covalently closed plasmid. Human immunodeficiency virus RNA was isolated from human serum using guanidine thiocyanate and SC, the isolated nucleic acid was treated with RNAse-free DNAse, and the RNA was amplified by polymerase chain reaction and detected.

L7 ANSWER 18 OF 20 CAPLUS COPYRIGHT 2005 ACS on STN
IN Hewitt, Peter Lloyd
SO Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
TI Process for rapid isolation of high molecular weight DNA
AB High-mol.-wt. nucleic acids (e.g. DNA) are isolated from their source organism (e.g. cells, viruses, etc.) by (1) forming a suspension of the organism; (2) treating the organism with lytic enzyme(s); (3) treating the organism with surfactant prior to, simultaneously with, or subsequent to step (2); (4) degrading unwanted classes of nucleic acids by treatment with nucleases for those nucleic acids; (5) degrading proteins by digestion with protease(s); (6) denaturing remaining proteins and dissocg. them from the nucleic acid by adding chaotropic agent(s); and (7) dialyzing and concg. the nucleic acid. A cell suspension of Pseudomonas aeruginosa DP295 was treated with a lytic enzyme cocktail contg. lysozyme, achromopeptidase, and endo-N-acetylmuramidase for 10 min at 37.degree.; SDS and RNase IA for 10 min at 60.degree.; proteinase K (after diln. with Tris buffer contg. NaCl and EDTA, pH 8.0) for 30 min at 60.degree.; and 1M F3CCO2Na for 5 min at 20.degree.. The sample was then dialyzed and concd. on a collodion membrane (.gtoreq.25,000 dalton av. retention). The purified DNA was analyzed by restriction enzyme anal. and DNA probe hybridization.

AU Fisher J.A.; Favreau M.B.R.
SO Analytical Biochemistry, (1991) 194/2 (309-315).
ISSN: 0003-2697 CODEN: ANBCA2
TI Plasmid purification by phenol extraction from guanidinium thiocyanate solution: Development of an automated protocol.
AB We have developed a novel plasmid isolation procedure and have adapted it for use on an automated nucleic acid extraction instrument. The protocol is based on the finding that phenol extraction of a 1 M guanidinium thiocyanate solution

at pH 4.5 efficiently removes genomic DNA from the aqueous phase, while supercoiled plasmid DNA is retained in the aqueous phase. S1 nuclease digestion of the removed genomic DNA shows that it has been denatured, which presumably confers solubility in the organic phase. The complete automated protocol for plasmid isolation involves pretreatment of bacterial cells successively with lysozyme, RNase A, and proteinase K. Following these digestions, the solution is extracted twice with a phenol/chloroform/water mixture and once with chloroform. Purified plasmid is then collected by isopropanol precipitation. The purified plasmid is essentially free of genomic DNA, RNA, and protein and is a suitable substrate for DNA sequencing and other applications requiring highly pure supercoiled plasmid.

IN Macfarlane, Donald E.
SO U.S., 5 pp.
CODEN: USXXAM
TI Process for purifying DNA and RNA using cationic detergents
AB Methods for the extn. of nucleic acids from biol. samples that use cationic detergents to ppt. the nucleic acids are described. A complex of nucleic acids and the detergent is formed that is insol. in water but that can be solubilized after solvent extn. of the detergent. The preferred detergent is an alkylbenzyldimethylammonium salt and the buffers also contain a chaotropic agent, a chelating agent, and a thiol reagent. HL-60 cells (1.5.times.107) were lysed by suspending in 16-BAC 1, 2-mercaptoethanol 1%, EDTA 10 mM, and urea 4M. The ppt. formed after 10 min at room temp. was collected, washed with EtOH, and dissolved in EtOH, then the nucleic acids were pptd. After treatment with RNase, 28-61 .mu.g DNA was recovered with an OD260/OD280 ratio of 1.56-1.71. The purifn. of RNA by this method was also demonstrated.

IN Koller, Charles A.
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
TI Methods and compositions for isolation of nucleic acids from eukaryotic and prokaryotic sources
AB Methods and compns. are provided for isolation of nucleic acids from cells. In particular aspects, chaotropic compns. (e.g. guanidine-HCl, guanidinium isothiocyanate), in combination with polyanionic compns. (e.g. those contg. sulfated polysaccharides such as heparin or heparitin sulfate), are used for the isolation of DNA and RNA. The method involves disrupting and lysing cells with a nucleic acid-releasing compn. contg. a chaotropic component for the release of nucleic acids from the cell. The released nucleic acids are collected by EtOH pptn. and resuspended before exposure to polyanion-contg.-protein-dissocg. compn. which promotes dissocn. of nucleic acid-assocd. proteins from the suspended nucleic acids. The nucleic acids are washed, further collected by EtOH pptn., and resuspended in a selective buffer prior to use. The method of the invention was used to isolate DNA from K562 cells.

IN Wiggins, James C.
SO U.S., 15 pp.
CODEN: USXXAM
TI Methods and compositions for isolating nucleic acids
AB Compns. and methods are disclosed for isolating nucleic acids from biol. tissues and cells (including tumor cells) and for tissue/cell solubilization for other mol. biol. uses, wherein the compns. comprise, in part, novel combinations of chaotropic agents and arom. alcs. which act synergistically to effect better tissue/protein solubilization. The inventive compns. further include aprotic solvents for deactivation of RNases and denaturization of proteins, as well as detergents for enhancing cell lysis and nucleoprotein dissocn. The inventive methods also comprise the use of a centrifuge, a solid-support matrix, and a microporous membrane for final isolation of the pptd. nucleic acids, resulting in high yield and purity of the pptd. nucleic acid.

IN Padhye, Vikas V.; York, Chuck; Burkiewicz, Adam
SO U.S., 12 pp., Cont.-in-part of U.S. Ser. No. 115,504, abandoned.
CODEN: USXXAM
TI Nucleic acid purification on silica gel and glass mixtures
AB Nucleic acids with lengths greater than about 50 bases are isolated from

cells, gels, solns. and other media, in which nucleic acids occur in vivo or in vitro, by using mixt. of silica gel and glass microfibers combined with chaotropic salts such as guanidinium chloride or guanidinium thiocyanate. An aq. soln. comprising nucleic acid is mixed with an aq. soln. of chaotropic salts and the resulting soln. is contacted with the above silica-based mixt. whereupon the nucleic acid in the soln. binds to the silica materials. The chaotropic salts and components, other than the nucleic acid adsorbed to the silica materials, are washed from the silica materials and the nucleic acid is obtained by elution. The methods provide nucleic acid in water or buffer free of contamination by any salt or macromol. that would interfere with further processing or anal.

IN Greenfeld, I. Larry
SO PCT Int. Appl., 129 pp.
CODEN: PIXXD2
TI Isolation of nucleic acids from biological samples using surfactants and proteases
AB The invention relates to compns. and methods for isolating nucleic acids from biol. samples, including whole tissue. The method comprises contacting the biol. sample with a disrupting buffer contg. proteases (e.g., Proteinase K) and a cationic surfactant (e.g., CTAB). The cationic surfactant is then neutralized either by its removal or by use of a second nonionic surfactants (e.g., Tween 20). Nucleic acids are then isolated by binding to a solid phase, such as glass fiber GF/B filters. The effects of cationic surfactants on activity of proteinase K, and the soly. of surfactants in different chaotropes is investigated to identify optimal cationic surfactants and salts. The invention also provides kits for isolating nucleic acids from biol. samples.

IN Reitan, Evy H.; Deggerdal, Arne; Skagestad, Vidar
SO PCT Int. Appl., 29 pp.
CODEN: PIXXD2
TI Methods for isolating nucleic acid from biological samples with chaotropic salts and silica-based magnetic particles
AB The present invention refers to methods for isolating nucleic acid from biol. samples with chaotropic salts and silica-based magnetic beads. Furthermore, the present invention refers to kit for sequentially isolating DNA and RNA from the same nucleic acid-contg. sample.

IN Chomczynski, Piotr
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
TI Chaotropic agent-based solutions and their use in the isolation of DNA, RNA and proteins
AB Solns. and methods are disclosed for the effective, simple isolation/extn. of DNA, RNA and proteins from a single biol. material sample, such as cells, tissues and biol. fluids. The preferred solns. include effective amts. of a chaotropic agent(s), buffer, reducing agent, and may or may not include an org. solvent. Genomic DNA and total RNA can be isolated utilizing the solns. and methods of the invention in as little as 20 min, and proteins in as little as 30 min. P0 cells (108) were lysed in 10 mL of a soln. of guanidine thiocyanate 4 M, isopropanol 17 vol %, sodium acetate 0.1 M, 2-aminoethanethiol hydrochloride 0.1 M, and Sarkosyl 0.2%, pH 7.0 in water. Total RNA was sedimented by centrifugation (10,000.times.g, 8 min at room temp.). The RNA was shown to contain undegraded mRNA for a no. of proteins specific to the P0 cells. DNA was recovered from the supernatant by spooling from the interface with isopropanol and proteins were recovered by pptn. with an excess of isopropanol.

IN Butt, Neil James; Joes, Christopher Peter
SO PCT Int. Appl., 17 pp.
CODEN: PIXXD2
TI Nucleic acid isolation by extraction into water-immiscible organic solvent and recovery from the organic phase
AB A method for isolating plasmid DNA from a DNA contg. material which comprises plasmid DNA and genomic DNA, comprising extg. the plasmid DNA into a water-immiscible org. solvent capable of supporting plasmid DNA, by mixing the material with the org. solvent, a chaotrope and water under conditions to denature the genomic DNA and recovering the plasmid DNA from the org. phase.

AU Casas I; Powell L; Klapper P E; Cleator G M
SO Journal of virological methods, (1995 May) 53 (1) 25-36.
Journal code: 8005839. ISSN: 0166-0934.
TI New method for the extraction of viral RNA and DNA from cerebrospinal fluid for use in the polymerase chain reaction assay.
AB A new, rapid, and simple method for the isolation of either RNA or DNA from cerebrospinal fluid samples for subsequent amplification by specific polymerase chain reaction (PCR) assays is described. The technique involves a single extraction with a guanidinium thiocyanate acid (GuSCN) buffer, and does not require the use of organic solvents. Applied to the recovery of enteroviral RNA, herpes simplex virus (HSV) and Varicella-zoster virus (VZV) DNAs the method has proved to be of equivalent or better efficiency than established methods of nucleic acid separation but is less laborious and time consuming. The simplicity of the procedure permits the processing of large numbers of samples and the use of a single preparative method for either RNA or DNA PCR makes it an attractive method for the routine laboratory.

IN Little, Michael C.
SO U.S., 9 pp. Cont. of U.S. Ser. No. 288,515, abandoned.
CODEN: USXXAM
TI Purification of DNA using diatomaceous earth
AB DNA is purified from a liq. using diatomaceous earth as sorbent in the presence of chaotropic agents, washing the diatomaceous earth contg. the bound DNA with an. aq. alc. soln., and eluting the DNA with H2O or a low salt buffer. The method can be used for isolating single- and double-stranded DNA, e.g. plasmids from bacterial lysates.

AU Koul, Sanjay; Verma, Vijeshwar; Kumar, Anil; Qazi, Ghulam N.
SO BioTechniques (1997), 23(4), 600, 602-603
CODEN: BTNQDO; ISSN: 0736-6205
TI Efficient recovery of plasmid DNA from Erwinia herbicola with high nuclease activity
AB Method for the extn. of plasmid DNA from E. herbicola is described which uses guanidinium thiocyanate to inhibit endogenous nuclease activity in order to improve DNA yields. The method also excludes the use of phenol, making the procedure very simple and efficient.
AU MARKO M A [Reprint author]; CHIPPERFIELD R; BIRNBOIM H C
SO Analytical Biochemistry, (1982) Vol. 121, No. 2, pp. 382-387.
CODEN: ANBCA2. ISSN: 0003-2697.
TI A PROCEDURE FOR THE LARGE-SCALE ISOLATION OF HIGHLY PURIFIED PLASMID DNA USING ALKALINE EXTRACTION AND BINDING TO GLASS POWDER.
AB A preparative procedure for obtaining highly purified plasmid [pBR322] DNA from bacterial [Escherichia coli] cells is described. The method is adapted from an earlier procedure, which gave partially purified plasmid in a form suitable for rapid screening of a large number of samples. In the present method, all detectable RNA, chromosomal DNA and protein are removed without the use of enzymes, phenol extraction, dialysis or equilibrium centrifugation. Binding of plasmid DNA to glass powder in the presence of 6 M sodium perchlorate is used for the final purification step.

AU Holm C; Meeks-Wagner D W; Fangman W L; Botstein D
SO Gene, (1986) 42 (2) 169-73.
Journal code: 7706761. ISSN: 0378-1119.
TI A rapid, efficient method for isolating DNA from yeast.
AB A method is described for the purification of chromosomal and plasmid DNA from the yeast Saccharomyces cerevisiae. This method is rapid, gives 75% of theoretical yield, and produces DNA that can be cut with restriction endonucleases. Yeast cells are treated with zymolyase, and the resulting spheroplasts are lysed in the presence of the chaotropic agent guanidine hydrochloride. After a brief ethanol precipitation, protein is removed by treatment with proteinase K followed by phenol-chloroform extraction. After ethanol precipitation, the DNA is sufficiently pure for restriction analysis or for the transformation of Escherichia coli.

AU Cole K D
SO BioTechniques, (1991 Jul) 11 (1) 18, 20, 22-4.

Journal code: 8306785. ISSN: 0736-6205.

TI Purification of plasmid and high molecular mass DNA using PEG-salt two-phase extraction.

AB A method for the rapid preparation of DNA is described. The method utilizes a polymer (polyethylene glycol) and salt solution to form a two-phase system. A crude source of DNA is added to a phase-forming mixture, it is mixed and phase separation occurs. Under the appropriate conditions, the nucleic acids remain in the lower (salt-rich) phase, while the proteins, cellular debris and other constituents are in the upper phase (polymer-rich) or are precipitated at the interphase region. Incorporation of protein denaturants (detergents and chaotropes) stop the action of liberated nucleases in the sample. The nucleic acids are obtained in an intact state and in a form suitable for further manipulation, as shown by gel electrophoresis and DNA restriction digestion. This method describes the conditions of the two-phase systems that are important for the separation of nucleic acids and proteins. The important phase-forming conditions shown in this paper are pH, polymer molecular weight and concentration, salt type and concentration and the addition of detergents and chaotropic agents. With the use of these extraction conditions, proteins can be moved selectively from the lower to the upper phase. The paper describes a method for DNA isolation that is rapid, simple and economical.